

much more studied by chemists had crystallographers avoided following the two latter distinguished men. It is difficult to understand such a view for, as far as descriptive crystallography is concerned, the Weissian and Millerian notations are practically identical except in the rhombohedral system, where different axial systems are adopted. The advantages of Miller's trigonometrical methods of calculation are acknowledged by many who, through long familiarity, invariably use the geometrical methods, and no one who is acquainted with both can hesitate as to the one he will employ.

The work is a fresh monument of Prof. Rammelsberg's indefatigable industry and skill in arranging and condensing a vast amount of material, and is a worthy addition to the long list of works on chemistry and crystallography with which science has been enriched by him.

OUR BOOK SHELF

The Encyclopædic Dictionary: A New and Original Work of Reference to all the Words in the English Language. By Robert Hunter, M.A., F.G.S. Illustrations. Vol. I.: A—Cab. (London: Cassell, Petter, and Galpin. No date.)

The Imperial Dictionary of the English Language: A complete Encyclopædic Lexicon, Literary, Scientific, and Technological. By John Ogilvie, LL.D. New Edition, carefully revised and greatly augmented. Edited by Charles Annandale, M.A. 3000 Engravings. Vol. I.: A—Depascent. (London: Blackie and Son., 1882.)

NO better evidence could be adduced of the extent to which science has permeated modern life and literature than the prominence given to scientific terms in these two dictionaries. Words which a few years ago were confined only to technical vocabularies and were known only by specialists, are in these reference-books for general use found side by side with the vocabularies of Chaucer, Shakespeare, Tennyson, and Dickens. The many illustrations, too, are to a large extent derived from science, while the great advances recently made by a scientific study of language are shown in the etymologies. Mr. Hunter's undertaking is one of great magnitude, a combination of the dictionary and encyclopædia, an account of things as well as words. To judge from the first volume, it is likely to turn out a work of great practical utility. The vocabulary is as complete as could be desired, and the treatment of the various terms full, concise, accurate, and methodical. Mr. Hunter includes terms in the oldest English, and the scientific vocabulary is so full that it will be found of service even to specialists. The special terminology of botany, zoology, and chemistry is included, and, so far as we have tested, all those terms which have originated in the recent rapid advances of science. The numerous illustrations are carefully and nicely executed, and the etymologies give evidence of the study of the best authorities; though sufficient care is not always taken to distinguish between cognates and derivatives. Mr. Hunter has been "assisted in special departments by various eminent authorities"; indeed he could never have adequately carried out his undertaking without such assistance. We wonder, however, who his botanical assistant is. Under Botany we have a short history of the science, in which its classifications by various authorities are given; in Modern Botany, for example, we have first Lindley, then Thomé, and finally—"Robert Brown, jun."!

Ogilvie's Imperial Dictionary has held its place for about forty years, in spite of certain failings, especially in its etymology. It quite deserved the great reputation

and popularity it had for so long, for it was really the most thorough and complete and practically useful dictionary in the language. It really, like Mr. Hunter's book, was a combination of dictionary and encyclopædia. It, however, greatly needed to be brought up to date, and this is what Mr. Annandale has attempted to do in the new edition, and the attempt has been successful. It is more concise than Mr. Hunter's book, both in vocabulary and definition, but on this very account may be preferred by many. It ranges over the whole of English and Scotch literature, and its scientific department is as full as the most exacting reader could require. The definitions are given with care and accuracy; the etymology is up to the latest research, and is concise and clear; the illustrative quotations show extensive reading, and the illustrations are thoroughly intelligible and neat. In its new form the "Imperial" is likely to meet with as wide acceptance as it did when originally published. Both dictionaries are excellently printed.

First Steps to a New Selenography; in which it will be recognised that the Moon was once an Inhabited World. By John Jones. (Dundee: J. Leng and Co., 1881.)

THE title of this little book is hardly in accordance with its contents. For it is not *selenography*—the description of the features of our satellite—but *selenology*, the theory of the mode of their formation, that the author has taken in hand; and the inhabitants to whom he proposes to introduce us will be found to be by no means, as we might have expected, "men in the moon," but creatures of one of the lowest types of existence. We will not, however, quarrel with this. But we are obliged to add that the writer has attacked his subject in rather a peculiar way. Having come into possession of a good telescope, he has satisfied himself, from three nights' inspection of the Moon, that all former observers are in the dark, and that the real cause of her crateriform aspect is the building up of *atolls* of coral reef in oceans of volcanic mud, while the mysterious brilliant streaks are due to the friction and polishing of a glacial period. Various theories, as our readers may be aware, have been proposed to account for the wonderful aspect which our satellite presents in a telescope, and which is not unencumbered with difficulty; and the discussion, which has been going on for half a century, has by no means reached an uncontroverted solution. Nor can it be any disadvantage to the cause of truth that it should be thoroughly ventilated, and looked at from every point of view. But we must be forgiven for doubting whether the publication before us will advance the inquiry. We are loth to bear hard on any ingenious speculator, but we cannot persuade ourselves that the "crater-craze," be it right or wrong, will be "exploded" by the observations of three nights. And as to the possibility, alleged in the "Epilogue," that a meteor, "colliding with the extremities of projecting pinnacles of the lunar structures," might demonstrate the theory to our senses by transferring a fragment of coral reef to the surface of our globe, the author we hope will excuse us for preferring to wait for the messenger before we acquiesce in the theory.

The First Book of Knowledge. By Fredk. Guthrie, F.R.S. (London: Marcus Ward and Co., 1881.)

FROM the style of this little book we should judge that it is intended for the use of School Board teachers in giving Object Lessons. It gives in simple language an idea of the nature of common objects, and also of the mode of their composition. Of course from a man of such well-known ability as Prof. Guthrie we may be quite sure that the book will be perfectly accurate and thoroughly good so far as its subject-matter is concerned. The manner, however, in which the knowledge to be communicated is arranged is by no means to be unreservedly praised. In endeavouring to be simple Prof. Guthrie has adopted a

style which, to say the least of it, is clumsy, and which in many places is so unique as to be almost ludicrous. Prof. Guthrie calls every thing either a *stuff* or a *thing*, for instance, clay is a stuff and a brick is a thing, so then he goes on to tell what stuffs are and how they are made into things. The different subjects are very carefully arranged in chapters and paragraphs, and questions are given which would prove very useful for a class. Some of the descriptions of common objects are graphic, in other cases there is rather too much brevity employed.

A Lady's Cruise in a French Man-of-War. By C. F. Gordon Cumming. Two vols. Map and Illustrations. (Edinburgh and London: Blackwood, 1882.)

THOSE who have read Miss Gordon Cumming's "At Home in Fiji," recently reviewed in these pages, will be glad to meet with her again. The present work is more slight and sketchy than the former, but no less interesting. It consists of a series of letters written from day to day during a cruise on board a French man-of-war, in the autumn of 1877. Miss Cumming was the guest of the French Bishop of Samoa, and accompanied him on his visits to the churches on various South Sea Islands. In this way she visited the Tonga, Samoa, and the Society Islands, making a specially long stay in Tahiti, and everywhere received with the warmest hospitality. Besides the genuine interest of Miss Cumming's narrative, it is valuable as giving a very full idea of the present condition of the islands visited. She has also a naturalist's eye for geology and botany, and has occasional interesting notes on the products of the islands. The cover of her book is a novelty, and its delicate colours make one afraid to handle it. It bears a coloured illustration of the beautiful climbing fern, which twines round trees and shrubs in the Pacific Islands, and is called by the natives "Wa Kalou" (God's Own Fern).

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

The Mid-day Darkness of Sunday, January 22

It is to be hoped that you will receive many and good accounts of the wonderful, perhaps unprecedented darkness which obscured London for some three hours on Sunday last, in order that its range may be localized.

It appears to have commenced about 10½ A.M., though I cannot vouch for it, as I had been up till near dawn, and was not roused till near noon. Then truly it was hard to believe the clock! To all practical intents and purposes it was night; only the street lamps remained unlit. This however enabled one to realize more fully the wonderful absence of all ordinary daylight in the streets. After the first surprise, it occurred to me to note such facts as would hereafter constitute evidence. In the first place I sought to establish that the phenomenon was not an ordinary thick London fog; secondly, to find some striking measure of the darkness, in one's immediate vicinity. A third observation offered itself in corroboration of both. These I will give in detail.

Looking out of a first-floor window, eastwards, I had on the right towards the south the sharp tall spire of Langham Church, clearly visible (at a distance of 65 yards) against the darkly lurid background afforded by the distant fog behind, which must have been the sun, then near the meridian and at about the proper elevation, but of course quite invisible. The clearness of the outline showed how slight was the fog—at any rate below the level of its apex. Next, looking across the street, fourteen yards from wall to wall, the gas-lit interiors opposite were all plainly visible—blinds not being down, nor curtains drawn, in London, during the daytime, even if the gas

is lit. It was *obvious* that there was no fog to speak of. Next, as to the darkness: I say that the street lamps were not lit; consequently this observation was easy. I remarked that though one could *hear* the passers-by on the opposite pavement, they were *quite invisible*. I could only see the lower limbs as they crossed the dim lights in the opposite basement windows. Lastly, looking northwards, where a turn of the street brings a line of four-storied houses across the line of sight, at forty-five yards distance, many of the windows where the occupants were not at church, being lighted from within, were easily seen; but there was *not the faintest sky-line*: the sky, or rather background of foggy air, was utterly devoid of illumination. The windows alone stood in evidence that there were houses there, *not* obscured by fog.

Finally, so strong was the impression of *mere darkness* that, having sat down to write, I started up and went again to the window, with the ejaculation—"Why, one ought to see the stars!" and I should hardly have been otherwise than satisfied if I *had* seen some.

Others may have seen this kind of thing in London before. Certainly I have not; and I have a strong impression that if it had happened on a week day, instead of on a Sunday during the morning service, we should have had a storm of complaints from the City, which even the *Times* would have noticed!

1, Langham Street, January 24

J. HERSCHEL

Earth-Currents

A REMARKABLE and unusual sudden appearance of earth currents occurred between 10.15 and 10.20 p.m. Greenwich time on the evening of January 19, on lines running east and west. They disappeared as rapidly as they arrived. They were weak, measuring, when at a maximum, 3.3 milliamperes. Traces remained until 10.50. It will be interesting to learn if simultaneous disturbances occurred in our magnetic observatories. I have not heard of any aurora being visible that night.

January 24

W. H. PREECE

The Storage of Electricity

We have heard a great deal of late in reference to what is called the storing of electricity, and not long since we had a long account in the *Times* of the journey from Paris to Scotland of a gentleman who carried with him a number of cells "filled with electricity," and representing "hundreds of thousands of foot-pounds of force." The daily papers and the scientific serials have vied with each other in telling how electricity can be stored, or bottled up and transported from place to place, to be drawn upon as circumstances may demand. The result is that the majority of those practically unacquainted with the subject have very false ideas as to the nature of the Planté, the Faure, or the Sutton accumulators. In no sense of the word can these beautiful forms of batteries be called storers of electricity. A man who should carry with him a piece of copper, a piece of zinc, and a little sulphuric acid, and should then boast that he was transporting electricity from place to place, or carrying half-a-dozen thunderstorms in his pocket, would be rightly regarded as committing an abuse of language. A man who carries a box of lucifer matches in his pocket has no right to say he is transporting fire from place to place, or to speak of them as storers or accumulators of fire. In like manner it is an abuse of language, to speak of electricity being carried from place to place, or stored up for future use in the Faure secondary battery. Nor is it less incorrect, or less misleading to speak of "charging" such batteries with electricity. The dynamo machine may render the amalgamated lead and copper of a Sutton battery capable of being unequally acted upon by sulphuric acid, and of thus giving rise to an energetic current of electricity, and the reversing action of such batteries is undoubtedly very beautiful and certain to be of the greatest possible practical convenience, but there is nothing in the principle of their action to justify the very misleading language used in reference to them, not only by writers to the provincial press but by scientific men in high-class journals. Practical electricians understand generally perfectly well what they mean by the figurative language they use, but it would be well, if in lectures and articles of a didactic nature, or intended for the information of the general public, they were to use language of a less metaphysical character and to describe a thing as it really is. It is because as a teacher I know how apt people are to give a concrete significance to abstract or figurative expres-